

COMMENTS ON THE PROPOSED DESIGNATION OF A NEOTYPE FOR  
*MYTILUS* (NOW *ANODONTA*) *ANATINUS* LINNAEUS, 1758.

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(see volume 21, pages 432-434)

By Per Brinck (Zoological Institute, University, Lund, Sweden)

In his application Dr. Lemche has presented the case well but I feel doubtful as regards his final proposals. A few additional data on the name *Mytilus anatinus* may be useful.

*Mytilus anatinus* was briefly diagnosed by Linnaeus (Syst. Nat. I, No. 219 : 706; 1758) as is given by Brander (Ark. f. Zool., ser. 2, 9 : 6 : 177) in his discussion of the name of the species. But there are two more detailed descriptions, viz. in the Fauna Suecica (ed. 1, 1746, No. 1332 : 380; ed. 2, 1761, No. 2158 : 522) and a few general notes in his "Lectures" written 1748-1752 (ed. E. Lönnberg : Linnés föreläsningar öfver djurriket, Stockholm 1913).

These data demonstrate that Linnaeus regarded his *M. anatinus* as covering the widely distributed Swedish "Sjö-Mussla" (Lake Mussel), "common in lakes and rivers where it is found in water so deep that it does not freeze. The shell is used to store the colour in the paint-boxes which are for sale in the grocers' shops". (Linnés föreläsningar, p. 354.)

Extant Linnaean material in the Linnaean Society (London) and the Zoological Museum of Upsala belongs to *Pseudanodonta complanata* (Ziegl.) Rossm., 1835 (cf. Brander, l.c.).

The species which is common and widespread in Sweden (like in the rest of Fennoscandia) is *Anodonta anatina* s. auct. anglic., while *Pseudanodonta complanata* (Ziegl.) Rossm. is rarely found and certainly not the species primarily meant by the trivial name *sjömussla*.

Present facts say, as does our knowledge of Linnaeus's idea of the species concept, that *Mytilus anatinus* L. was a composite species, meant to cover the big mussels abundantly occurring in Swedish lakes (and rivers). Therefore, we are certainly not forced to accept any Linnaean specimen in London and Upsala as being the "type", and by the way, I know of no designation of such a specimen as a lectotype, though according to Lemche (l.c.) the specimen in London is "generally regarded as the type".

From a practical point of view the best would undoubtedly be to drop *anatina* and preserve Nilsson's name *piscinalis* for the species, at the same time as the *Pseudanodonta* species under discussion is dealt with as *P. complanata* (Ziegl.) Rossm. The question is whether it is such a very serious procedure to suppress and extract a name already on the Official List (Lemche, l.c.), a name which happened to come there without a close examination of the case. I would prefer a solution according to this alternative.

Dr. Lemche, however, has accepted alternative (c) of Dr. Hubendick and Dr. Waldén (Bull. zool. Nomencl. 21 : 435), viz. selecting a neotype of *Mytilus anatinus* inconsistent with the "original" Linnaean material.

Dr. Lemche proceeds by saying that he has "not been able to get any help from Swedish malacologists in choosing a neotype among material in a Swedish museum and from Sweden". So he chooses a shell from the moat around Copenhagen, more closely the part retained as a small lake in the botanical garden. I wonder if Dr. Lemche has tried to come in contact with the people at the Lund Zoological Museum which has rich collections of Swedish *Anodonta*, including the typical material of Sven Nilsson, and has a specialist working on the ecological distribution and differentiation of these molluscs.

As is evident from, e.g. Brander's paper (Afk. f. Zool. 9, 6 : 175 sqq) there is a very great variation among these molluscs, dependent on the habitat. Therefore, it is important that a neotype is not chosen from a habitat like a moat, being in a way an artefact which certainly stamps any population of these mussels typologically. We would all be anxious not to fix the name *anatina* to such a population. It we want to

designate a neotype there is no doubt that the best is to select as such the lectotype, of Nilsson's *piscinalis* which should be chosen out of the Nilsson collection in Lund and referred to one of the rich Scanian lake populations of the species.

I have contacted Dr. T. Brander, Helsingfors, Finland, our foremost specialist of these mussels, and he informs me that according to his opinion it is definitely better to suppress *anatina* than to select a neotype = *piscinalis* Nilsson, since the name *anatina* is used in so many different ways. Anyhow, he can see no reason to take a possible neotype from a town moat, and discusses at length the modification of the species in various types of water. He concludes that a good representative of the unmodified form, inhabiting natural eutrophic water bodies, is the specimen ex coll. Nilsson (in the Lund Museum) which was figured by him in 1956 (l.c.: 181, fig. 4) and this should preferably be selected as the neotype, if such a procedure is found to be necessary.

By Joshua L. Baily, Jr. (*San Diego, California*)

I agree with Dr. Lemche completely that the name *Anodonta anatina* should not be withdrawn from the Official List, for the reason set out by Dr. Lemche—that it would impair the authority of these lists.

The number of those who do not accept the rulings of the Commission is uncomfortably large, and I think it would be unfortunate if the Commission itself should take any step to fortify their position. So at all costs this name should be retained. Perhaps it might have been possible in the past to have kept this name off the Official List, but it is too late now to consider what should have been done before. To remove a name from the list after it has once been placed there would do more to destabilize its standing than any other step I can think of. The name should therefore be preserved and a suitable specimen be suggested and then confirmed a neotype.

Dr. Lemche does not state where the type locality of this species is. Neither do Dr. Hubendick and Dr. Waldén in their comment on Dr. Lemche's application (ibid., p. 435) although they imply that it is known.

The species selected by Dr. Lemche apparently does not come from the type locality, and is therefore not a satisfactory neotype. But it is possible that there are no perfect specimens from the type locality. This would be unfortunate, as the neotype should of course be perfect. It is obvious that selection of a damaged specimen may make trouble in the future if it is designated as a type.

The locality given by Linnaeus is the fresh waters of Europe. That is broad enough to cover the locality of Dr. Lemche's lectotype. That would be perfectly satisfactory to me if there are no better specimens in the Linnean collection in London or the collection in the M.L.U. It would seem that further investigation is needed before an ideally satisfactory neotype can be appointed.

By C. O. van Regteren Altena (*Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands*)

Before discussing the two solutions proposed by H. Lemche (*Bull.* 21 (6) : 432–434, December 1964) I want to point out to the International Commission on Zoological Nomenclature that not all malacologists agree about the number of species of *Anodonta* (s. str.) to be distinguished in the European fauna. The outstanding specialist of najads, and particularly of the European species, F. Haas (see, e.g. *Fieldiana*, Zool. 24 : 136, January 30, 1940) has eventually come to the conclusion that all the European forms of *Anodonta* (s. str.) belong to one extremely variable species: *A. cygnea* (L.). This already earlier expressed opinion was followed for instance in P. Ehrmann's authoritative treatment of the non-marine Mollusca in "Die Tierwelt Mitteleuropas" (1933). As the name *Mytilus cygneus* Linnaeus has been put on the Official List of Specific Names in Zoology as the type-species of the genus *Anodonta* Lamarck, acceptance of Lemche's proposal would place a name on that list which some specialists consider to be a subjective synonym of a name already earlier placed on it.

On the other hand, the number of authors holding the opinion that there exist two species of *Anodonta* (s. str.) in Western Europe is perhaps greater than that of those

following Haas. Although they admit that both species are very variable and often difficult to distinguish, their opinion is also based on careful study of a large amount of material. They are, therefore, fully justified in claiming a valid name for what they consider to be a "good" species.\*

I do not think that it can be wholly avoided that names which are subjective synonyms according to some specialists will be placed on the Official List, but those who have to decide this case should know about all its intricacies.

I agree with Lemche that "extraction of a name already on the Official List is a very serious thing to do", but, on the other hand, choosing a neotype for a species disagreeing with the result of careful analysis of its author's intentions also seems a first step on a slippery slope. A better solution might be to let the name *Anodonta anatina* date from the first author who unequivocally meant the possible second European species of *Anodonta* (s. str.) by it, which, according to Brander (*Ark. Zool.* (2) 9 (6) : 182, June 8, 1956), probably was O. F. Müller, 1774.

We in the Netherlands always used the name *A. piscinalis* Nilsson for that form. Acceptance of Lemche's proposal (A) would, therefore, favour stability in Dutch faunistic literature.

By A. E. Ellis (Carshalton, Surrey, England)

The application by Dr. Lemche is timely, and I beg to support his suggested solution (C). This is all the more desirable because *Anodonta piscinalis* Nilsson, 1823, is by no means the earliest name for this species if *anatinus* Linnaeus is rejected. The following specific names, which are regarded by various authors as synonymous with *Anodonta anatina* (L.), would have to be considered:

*Mytilus radiatus* Müller, 1774, *Vermium terrestrium et fluviatilium Historia* 2 : 209

*Mytilus avonensis* Montagu, 1803, *Testacea britannica*: 172

*Mytilus fucatus* Dillwyn, 1817, *Descriptive catalogue of Recent shells*: 317

*Anodonta intermedia* Lamarck, 1819, *Histoire naturelle des Animaux sans Vertébres* 6 (1) : 86

*Anodonta palustris* Férussac, 1822, *Dict. Class. Hist. nat.* 1 : 397

*Mytilus macula* Sheppard, 1822, *Trans. Linn. Soc. Lond.* 13 : 86

*Mytilus incrassatus* Sheppard, 1822, *Trans. Linn. Soc. Lond.* 13 : 85

Although these names antedate *piscinalis* Nilsson, none of them has ever been in general use for this species; they would, however, need to be disposed of before *piscinalis* could be accepted. If the Commission decides to adopt Lemche's solution (C), no further action with regard to these names would be called for. I accordingly warmly commend this solution.

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\* As far as I know, the arguments brought forward by either of these two "schools" have never been definitely refuted. Adam (*Mém. Mus. R. Hist. Nat. Belg.* 106: 195, 1947) found anatomical differences between the two forms in Belgium. His results should be checked in the forms assigned to the two possible species in other countries.